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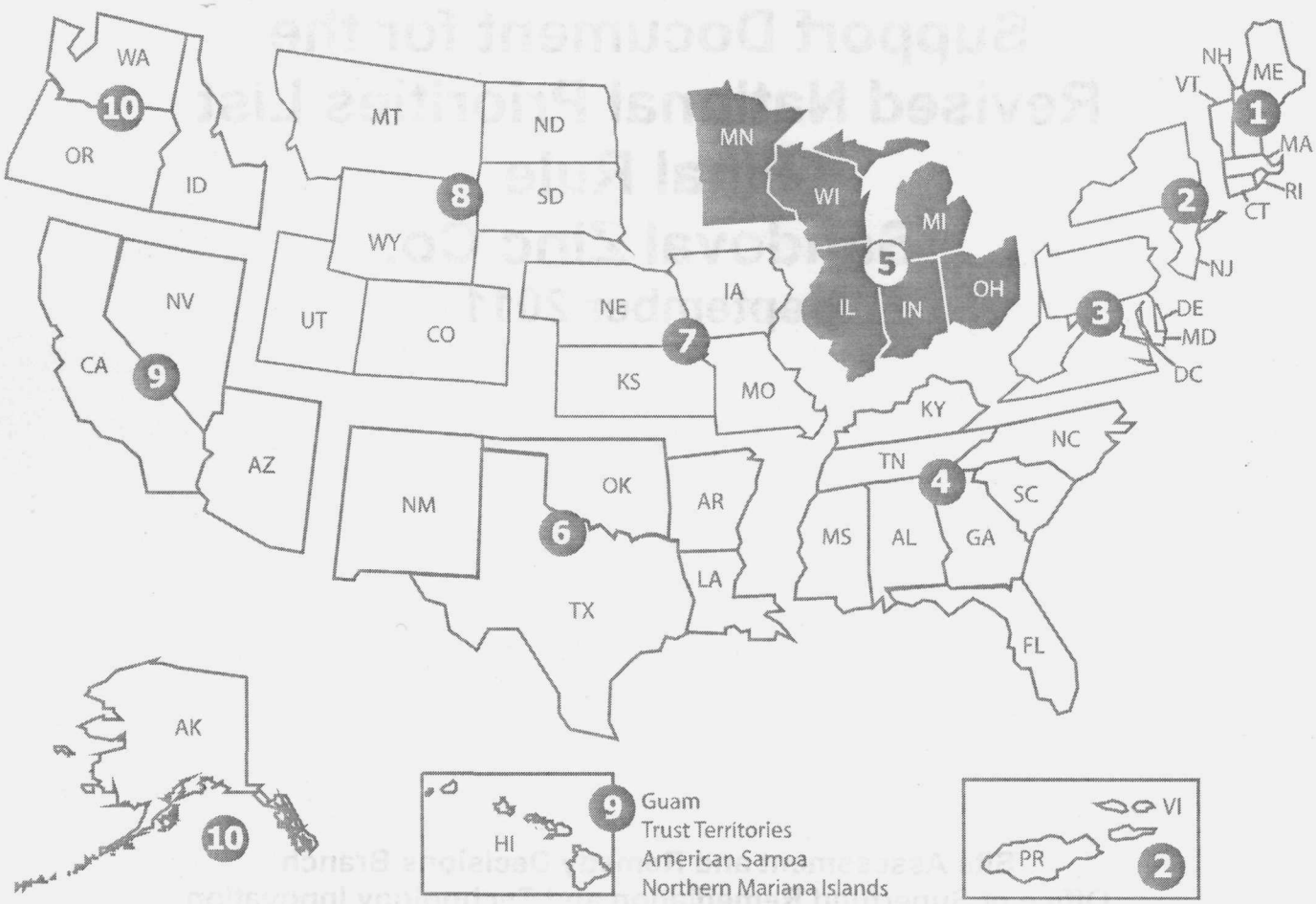
Office of Solid Waste and Emergency Response

Support Document for the Revised National Priorities List Final Rule – Sandoval Zinc Co.



Support Document for the Revised National Priorities List Final Rule Sandoval Zinc Co.

September 2011

Site Assessment and Remedy Decisions Branch
Office of Superfund Remediation and Technology Innovation
Office of Solid Waste and Emergency Response
U.S. Environmental Protection Agency
Washington, DC 20460

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Executive Summary

Section 105(a)(8)(B) of CERCLA, as amended by SARA, requires that the EPA prepare a list of national priorities among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States. An original National Priorities List (NPL) was promulgated on September 8, 1983 (48 FR 40658). CERCLA requires that EPA update the list at least annually.

This document provides responses to public comments received on the Sandoval Zinc Co. site, proposed on March 10, 2011 (76 FR 13113). This site is being added to the NPL based on an evaluation under EPA's Hazard Ranking System (HRS) in a final rule published in the *Federal Register* in September 2011.

Introduction

This document explains the rationale for adding the Sandoval Zinc Co. site in Sandoval, Illinois, to the National Priorities List (NPL) of uncontrolled hazardous waste sites and provides responses to public comments received on this site listing proposal. The EPA proposed this site to the NPL on March 10, 2011 (76 FR 13113). This site is being added to the NPL based on an evaluation under the Hazard Ranking System (HRS) in a final rule published in the *Federal Register* in September 2011.

Background of the NPL

In 1980, Congress enacted the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. Sections 9601 *et seq.* in response to the dangers of uncontrolled hazardous waste sites. CERCLA was amended on October 17, 1986, by the Superfund Amendments and Reauthorization Act (SARA), Public Law No. 99-499, stat., 1613 *et seq.* To implement CERCLA, the EPA promulgated the revised National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR Part 300, on July 16, 1982 (47 FR 31180), pursuant to CERCLA Section 105 and Executive Order 12316 (46 FR 42237, August 20, 1981). The NCP, further revised by the EPA on September 16, 1985 (50 FR 37624) and November 20, 1985 (50 FR 47912), sets forth guidelines and procedures needed to respond under CERCLA to releases and threatened releases of hazardous substances, pollutants, or contaminants. On March 8, 1990 (55 FR 8666), the EPA further revised the NCP in response to SARA.

Section 105(a)(8)(A) of CERCLA, as amended by SARA, requires that the NCP include

> criteria for determining priorities among releases or threatened releases throughout the United States for the purpose of taking remedial action and, to the extent practicable, take into account the potential urgency of such action, for the purpose of taking removal action.

Removal action involves cleanup or other actions that are taken in response to emergency conditions or on a short-term or temporary basis (CERCLA Section 101). Remedial action is generally long-term in nature and involves response actions that are consistent with a permanent remedy for a release (CERCLA Section 101). Criteria for placing sites on the NPL, which makes them eligible for remedial actions financed by the Trust Fund established under CERCLA, were included in the HRS. The EPA promulgated the HRS as Appendix A of the NCP (47 FR 31219, July 16, 1982). On December 14, 1990 (56 FR 51532), the EPA promulgated revisions to the HRS in response to SARA, and established the effective date for the HRS revisions as March 15, 1991.

Section 105(a)(8)(B) of CERCLA, as amended, requires that the statutory criteria provided by the HRS be used to prepare a list of national priorities among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States. The list, which is Appendix B of the NCP, is the NPL.

An original NPL of 406 sites was promulgated on September 8, 1983 (48 FR 40658). At that time, an HRS score of 28.5 was established as the cutoff for listing because it yielded an initial NPL of at least 400 sites, as suggested by CERCLA. The NPL has been expanded several times since then, most recently on March 10, 2011 (76 FR 13089). The Agency also has published a number of proposed rulemakings to add sites to the NPL. The most recent proposal was on March 10, 2011 (76 FR 13113).

Development of the NPL

The primary purpose of the NPL is stated in the legislative history of CERCLA (Report of the Committee on Environment and Public Works, Senate Report No. 96-848, 96th Cong., 2d Sess. 60 [1980]).

> The priority list serves primarily informational purposes, identifying for the States and the public those facilities and sites or other releases which appear to warrant remedial actions. Inclusion of a facility or site on the list does not in itself reflect a judgment of the activities of its owner or operator, it does not require those persons to undertake any action, nor does it assign liability to any person. Subsequent government actions will be necessary in order to do so, and these actions will be attended by all appropriate procedural safeguards.

The NPL, therefore, is primarily an informational and management tool. The identification of a site for the NPL is intended primarily to guide the EPA in determining which sites warrant further investigation to assess the nature and extent of the human health and environmental risks associated with the site and to determine what CERCLA-financed remedial action(s), if any, may be appropriate. The NPL also serves to notify the public of sites the EPA believes warrant further investigation. Finally, listing a site may, to the extent potentially responsible parties are identifiable at the time of listing, serve as notice to such parties that the Agency may initiate CERCLA-financed remedial action.

CERCLA Section 105(a)(8)(B) directs the EPA to list priority sites among the known releases or threatened release of hazardous substances, pollutants, or contaminants, and Section 105(a)(8)(A) directs the EPA to consider certain enumerated and other appropriate factors in doing so. Thus, as a matter of policy, the EPA has the discretion not to use CERCLA to respond to certain types of releases. Where other authorities exist, placing sites on the NPL for possible remedial action under CERCLA may not be appropriate. Therefore, the EPA has chosen not to place certain types of sites on the NPL even though CERCLA does not exclude such action. If, however, the Agency later determines that sites not listed as a matter of policy are not being properly responded to, the Agency may consider placing them on the NPL.

Hazard Ranking System

The HRS is the principal mechanism the EPA uses to place uncontrolled waste sites on the NPL. It is a numerically based screening system that uses information from initial, limited investigations -- the preliminary assessment and site inspection -- to assess the relative potential of sites to pose a threat to human health or the environment. HRS scores, however, do not determine the sequence in which the EPA funds remedial response actions, because the information collected to develop HRS scores is not sufficient in itself to determine either the extent of contamination or the appropriate response for a particular site. Moreover, the sites with the highest scores do not necessarily come to the Agency's attention first, so that addressing sites strictly on the basis of ranking would in some cases require stopping work at sites where it was already underway. Thus, the EPA relies on further, more detailed studies in the remedial investigation/feasibility study that typically follows listing.

The HRS uses a structured value analysis approach to scoring sites. This approach assigns numerical values to factors that relate to or indicate risk, based on conditions at the site. The factors are grouped into three categories. Each category has a maximum value. The categories are:

- likelihood that a site has released or has the potential to release hazardous substances into the environment;
- characteristics of the waste (toxicity and waste quantity); and
- people or sensitive environments (targets) affected by the release.

Under the HRS, four pathways can be scored for one or more threats as identified below:

- Ground Water Migration (S_{gw})
  - drinking water

- Surface Water Migration (S_{sw})
  The following threats are evaluated for two separate migration components, overland/flood migration and ground water to surface water.
  - drinking water
  - human food chain
  - sensitive environments

- Soil Exposure (S_s)
  - resident population
  - nearby population
  - sensitive environments

- Air Migration (S_a)
  - population
  - sensitive environments

After scores are calculated for one or more pathways according to prescribed guidelines, they are combined using the following root-mean-square equation to determine the overall site score (S), which ranges from 0 to 100:

$$S = \sqrt{\frac{S_{gw}^2 + S_{sw}^2 + S_s^2 + S_a^2}{4}}$$

If all pathway scores are low, the HRS score is low. However, the HRS score can be relatively high even if only one pathway score is high. This is an important requirement for HRS scoring because some extremely dangerous sites pose threats through only one pathway. For example, buried leaking drums of hazardous substances can contaminate drinking water wells, but -- if the drums are buried deep enough and the substances not very volatile -- not surface water or air.

Other Mechanisms for Listing

There are two mechanisms other than the HRS by which sites can be placed on the NPL. The first of these mechanisms, authorized by the NCP at 40 CFR 300.425(c)(2), allows each State and Territory to designate one site as its highest priority regardless of score. The last mechanism, authorized by the NCP at 40 CFR 300.425(c)(3), allows listing a site if it meets the following three requirements:

- Agency for Toxic Substances and Disease Registry (ATSDR) of the U.S. Public Health Service has issued a health advisory that recommends dissociation of individuals from the release;
- The EPA determines the site poses a significant threat to public health; and
- The EPA anticipates it will be more cost-effective to use its remedial authority than to use its emergency removal authority to respond to the site.

Organization of this Document

The following section contains the EPA responses to site-specific public comments received on the proposal of the Sandoval Zinc Co. site on March 10, 2011 (76 FR 13113). The site discussion begins with a list of commenters, followed by a site description, a summary of comments, and Agency responses to each comment. A concluding statement indicates the effect of the comments on the HRS score for the site.

Glossary

The following acronyms and abbreviations are used throughout the text:

Agency	U.S. Environmental Protection Agency
ATSDR	Agency for Toxic Substances and Disease Registry
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. Sections 9601 *et seq.*, also known as Superfund
CFR	Code of Federal Regulations
Cir.	Circuit Court
Co.	Company
D.C.	District of Columbia
DOT	Department of Transportation
EPA	U.S. Environmental Protection Agency
ESI	Expanded Site Inspection
FR	Federal Register
FS	Feasibility Study
HRS	Hazard Ranking System, Appendix A of the NCP
HRS score	Overall site score calculated using the Hazard Ranking System; ranges from 0 to 100
IL	Illinois
LLP	Limited Liability Partnership
MSL	Above mean sea level
NCP	National Oil and Hazardous Substances Pollution Contingency Plan, 40 C.F.R. Part 300
NPL	National Priorities List, Appendix B of the NCP
PA	Preliminary Assessment
PPE	Probable point of entry
PRP	Potentially responsible party
RI	Remedial Investigation
RI/FS	Remedial Investigation and Feasibility Study
ROD	Record of Decision
SARA	Superfund Amendments and Reauthorization Act
SI	Site Inspection

1. List of Commenters and Correspondence

EPA-HQ-SFUND-2011-0061 — Comment submitted by William J. Anaya, Arnstein & Lehr LLP, on behalf of AK Steel Corporation, Valmont Industries, Inc., InterAmerican Zinc, Inc., Metalchem, Inc., Midwest Zinc Corporation and Mervis Industries on May 9, 2011.

2. Site Description

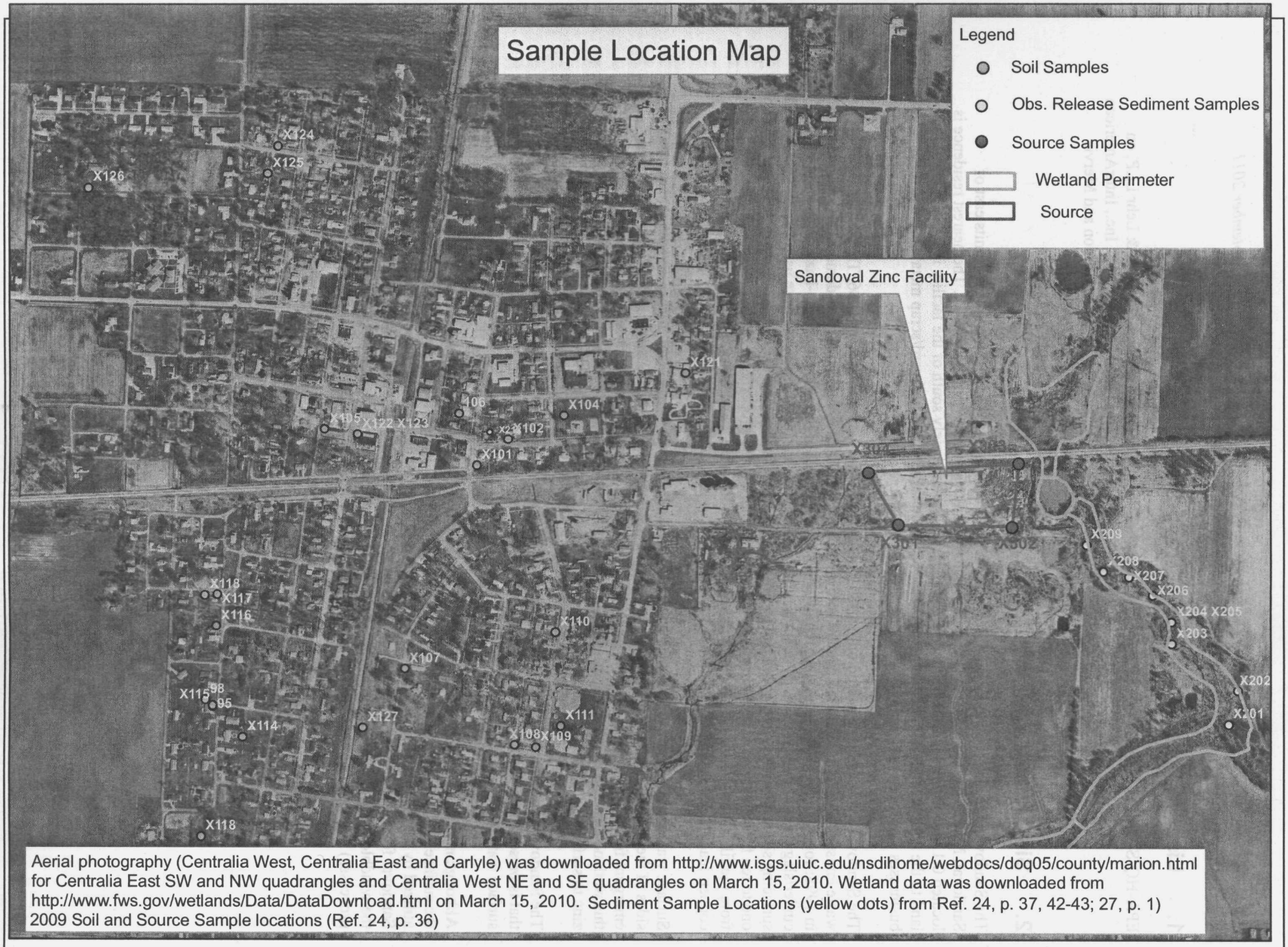
The Sandoval Zinc Co. (Sandoval Zinc) former zinc smelter is located just outside the city limits east of Sandoval, Marion County, Illinois. The population of Sandoval is approximately 1,318. The nearest residence is located 0.1 mile to the southwest of the facility. The land immediately south of the facility is farmland, and the land to the north is undeveloped grassland. West of Sandoval Zinc is a junkyard/scrap metal yard and other small businesses along a state highway.

The Sandoval Zinc smelter operated until 1985, and the company went bankrupt in 1986. The principal facility waste emissions were metal-laden cinders and windblown ash. Facility buildings were demolished and removed in 1998; foundations remain. Building removal included removal of hazardous and non-hazardous waste but cinder/slag was not removed. Large quantities of cinders from the smelting process were used in constructing and surfacing secondary roads in the area and as fill material at the facility. Due to filling, layers of cinders range from one to ten feet thick over approximately twelve acres of the facility property. Waste/source samples collected from the fill material during multiple sampling investigations were found to contain antimony, arsenic, cadmium, copper, lead, nickel, and zinc.

Surface water runoff from the Sandoval Zinc facility property enters intermittent ditches on both the east and west sides of the facility, predominantly the east side. The intermittent ditch on the east side leads to a palustrine emergent freshwater wetland near the southeastern property boundary. Sediment samples collected throughout this wetland during a 2009 sampling investigation established an observed release of antimony, copper, lead, and zinc to surface water and also documented Level II concentrations in the wetland.

The Sandoval Zinc site, as scored for HRS purposes, consists of one source, the waste pile of cinder/slag material that is present throughout the area of the facility, along with a release to a sensitive environment (wetland) via the surface water pathway.

Although not evaluated for HRS scoring purposes, there are indications that areas outside the facility property and the surface water pathway may have been affected by Sandoval Zinc site releases. Cinders that could not be utilized by the smelter were placed into large piles at the facility and offered to the public and the Village of Sandoval for use in constructing and surfacing roadways, driveways, sidewalks, and parking lots. Additionally, the windblown ash from the smelter stack (and possibly windblown emissions due to waste product handling processes) may have settled on the facility property and other parts of the Village of Sandoval.



Aerial photography (Centralia West, Centralia East and Carlyle) was downloaded from http://www.isgs.uiuc.edu/nsdihome/webdocs/doq05/county/marion.html for Centralia East SW and NW quadrangles and Centralia West NE and SE quadrangles on March 15, 2010. Wetland data was downloaded from http://www.fws.gov/wetlands/Data/DataDownload.html on March 15, 2010. Sediment Sample Locations (yellow dots) from Ref. 24, p. 37, 42-43; 27, p. 1) 2009 Soil and Source Sample locations (Ref. 24, p. 36)

3. Summary of Comments

Arnstein & Lehr, LLP, Attorneys at Law, on behalf of AK Steel Corporation, Valmont Industries, Inc., InterAmerican Zinc, Inc., Metalchem, Inc., Midwest Zinc Corporation and Mervis Industries (hereafter Arnstein & Lehr) submitted comments in opposition to placing the Sandoval Zinc site (hereafter referred to as the Site) on the National Priorities List (NPL). Arnstein & Lehr commented that it was arbitrary, capricious, and unlawful to list a site with undefined boundaries on the NPL. It also submitted comments objecting to a soil investigation that it considered the EPA was proposing to conduct in the Village of Sandoval, but additionally argued that the EPA needed to undertake further investigation to support the listing, define the site, and determine liability. Arnstein & Lehr noted that the EPA identified other possible sources of contamination related to the site, but claimed these were not supported by sufficient data in the record.

On the basis of these comments, Arnstein & Lehr recommended that the Agency "decline the opportunity" to include Sandoval Zinc on the NPL.

3.1 Definition of Site

Comment: Arnstein & Lehr stated that the EPA scored the "Sandoval Zinc Company property" using the "Hazardous" Ranking System. It also stated that the EPA is attempting to include areas within and just outside the geographical boundaries of the former Sandoval Zinc Company property on the NPL.

Response: The Site was not accurately described by the commenter as "the Sandoval Zinc Company property,": the site is not coexistent with the "Company property." Furthermore, the Site is named the Sandoval Zinc Co., as opposed to the Sandoval Zinc Co. *property*. Neither CERCLA nor the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (55 FR 51587, December 14, 1990), which includes the HRS, restricts a site to property boundaries, nor does either require the determination of precise site boundaries. The Site, for HRS purposes, includes where a release has come to be located: as described for scoring purposes in the HRS documentation record at proposal, this includes the cinder/slag pile at the facility along with an associated release to a wetland outside the property boundaries. (Note that the commenter did not challenge the identification of the source or the contamination in the wetlands in the HRS documentation record at proposal.)

CERCLA Section 101(a) defines a "facility" as the "site" where a hazardous substance has been "deposited, stored, placed, or otherwise come to be located." The "come to be located" language gives the EPA broad authority to clean up contamination when it has spread from the original source.

The 1990 HRS (55 FR 51587, December 14, 1990) elaborates on the "come to be located" language, defining "site" as "area(s) where a hazardous substance has been deposited, stored, disposed, or placed, or has otherwise come to be located. Such areas may include multiple sources, and may include the area between the sources."

Within the site for scoring purposes are Source 1, the cinder/slag pile, along with the location of the observed release in an adjacent wetland. This is identified in the HRS documentation record at proposal on page 21, which states:

> The principal source is identified as the cinder/slag pile at the property (Ref. 24, p. 17-19). As evidenced within this HRS documentation record, cinders and contaminants were identified in the wetlands adjacent to Sandoval Zinc Company property and contained elevated (as compared to background) concentrations of antimony, arsenic, cadmium, cobalt, copper, lead, manganese, nickel and zinc (Ref. 12, p. 37; Ref. 24, p. 29, Table 4; Ref. 38). An artificial mound of cinders and other fill material has raised the elevation of the central part of the property to approximately 510 feet MSL (above mean sea level) (Ref. 13, p. 3-1, Appendix A, Topographic and Boundary

> Survey). The land surface slopes gently to the lower elevations on all sides, except to the east where a rapid drop of about 5 to 8 feet occurs (Ref. 13, p. 3-1, Appendix A, Topographic and Boundary Survey). Surface runoff draining to the north and east flows directly into the wetlands located on the eastern portion of the property (Refs. 24, p. 61-62; 30). A site, for HRS purposes, is defined as any area or areas where a hazardous substance has been deposited, stored, disposed, or placed, or has otherwise come to be located (Ref. 1, p. 51587). For HRS scoring purposes, the Sandoval Zinc Company site refers to one source classified as a waste pile, with an associated release to a wetland.

The description of the wetland is presented on HRS documentation record at proposal pages 46 and 47, which state:

> Level II concentrations of source-related contaminants occur within a 3211.5-foot perimeter of wetlands (Ref. 27, p. 1-2). A wetland delineation was conducted using the National Wetlands Inventory Map (Ref. 6). Designated wetlands are present along the surface water pathway (Ref. 6: National Wetlands Inventory Map, Centralia East IL quadrangle, 1987). These wetlands can be viewed in Figures 7 and 8. Designated wetlands are present from the PPE [probable point of entry] to Prairie Creek (Ref. 6; 40; 27, p. 4; Figure 8). These wetlands extend all the way to Prairie Creek (1586 feet downstream) (Ref. 27, p. 1-2). The wetlands found at the PPE and up to Prairie Creek consist of Palustrine Emergent Seasonally Flooded wetlands (Ref. 6). This type of wetlands meets the 40 CFR 230.3 definition of a wetland, due to the presence of emergent hydrophytes (Ref. 24, p. 64-67 (photographs of *Phragmites australis*)).

These wetlands areas were demonstrated to be contaminated in accordance with the requirements of the HRS to establish the contamination is the result of a release from the Sandoval Zinc facility using specific sample data, as documented in the HRS documentation record at proposal. Section 2.2.2, Hazardous Substances Associated with the Source, on pages 26-28 of the HRS documentation record at proposal provides the specific documentation for the source characterization. Figure 3 of the HRS documentation record at proposal describes this documentation.

Section 4.1.4.1, Likelihood of Release, on pages 36-41 of the HRS documentation record at proposal provides the specific documentation for the zone of contamination in the wetlands. Figure 4 of the HRS documentation record at proposal describes this documentation. The primary investigations supporting the documentation of the zone of contamination were a 2009 Expanded Site Inspection (ESI) conducted by the State of Illinois (Reference 24), and a 1996 ESI (Reference 9), also conducted by the State of Illinois. Both ESIs were supported by information gathered during the State's PA and screening SI, and both were conducted under cooperative agreement with the EPA. Additional supporting information for the HRS scoring was provided by a 1993 Feasibility Study conducted by Ebasco, an engineering firm under contract to the Illinois Environmental Protection Agency to perform the feasibility study, and a soil and ground water study conducted in 1982 by the Illinois State Water Survey and the Illinois State Geological Survey, along with the remaining references that are specifically cited throughout the HRS documentation record at proposal, and that are listed on pages 16 through 20 of the HRS documentation record at proposal.

As the site definition includes the source (the cinder/slag pile where cinder/slag was "deposited" or "placed") and an associated release ("otherwise come to be located"), the determination that the site includes a waste pile and the contamination in the wetlands as part of the site is in accordance with the provisions of both CERCLA and the HRS.

This comment results in no change to the HRS score and no change in the decision to place the Site on the NPL.

3.2 Extent of Site

Arnstein & Lehr commented on what it considered to be the site boundaries and how the boundaries may change in the future.

3.2.1 Extent of Site for Listing Purposes

Comment: Arnstein & Lehr observed that the EPA indicated that the boundaries of the proposed NPL site are not known, and may expand. Arnstein & Lehr also alleged that to include such a site (or portion of a site), or identify such a "facility" with unknown/undefined boundaries on the NPL is based on speculation, which is arbitrary, capricious, unlawful and premature, and is done without authority.

Response: The extent of the Site has been adequately established to demonstrate that the HRS site score is sufficient to place the site on the NPL. It is not necessary to establish precise site "boundaries" to perform or document this evaluation, nor does CERCLA or the HRS require the boundaries be established at listing. An HRS score is based on documented releases, not on the precise boundaries of their area.

As discussed previously in section 3.1, Definition of Site, of this support document, the areas of contamination have been delineated consistent with the provisions of CERCLA and the HRS. Section 3.1, Definition of Site, of this support document, also points out that the site for scoring purposes consists of Source 1, the cinder/slag pile, along with an associated release to wetlands. The identification of the source and release in the HRS documentation record at proposal is based on sampling data and information provided by two ESIs conducted by the State of Illinois (1996 ESI, Reference 9; 2009 ESI, Reference 24). (See Sections 2.2 and 4.1.4.1 of the HRS documentation record at proposal.)

Therefore, that the source and the contamination of the wetland is part of the site is based on actual data; these areas were identified consistent with the HRS requirements and are not based on speculation. The site with these two areas of contamination is shown in the HRS documentation record at proposal to be sufficient to achieve an NPL-qualifying site score under the provisions of CERCLA. Thus, the listing of the site as delineated is not arbitrary, capricious, unlawful or premature, nor is it conducted without authority.

Whether site boundaries or the extent of the site may expand as CERCLA activities continue after listing is discussed in section 3.2.2, Expansion of Site, of this support document.

Inasmuch as the comment challenges the adequacy of the HRS to identify sites for the NPL and further CERCLA attention, this is a comment on the HRS itself, not on its use in the evaluation of this site. Such a comment is outside the scope of this rulemaking, which is limited to the placement of the Sandoval Zinc site on the NPL. The HRS and the process used in placing a site on the NPL were promulgated on December 14, 1990 (55 FR 51569), and comments directed at the HRS are not relevant to the proposal to place the Sandoval Zinc site on the NPL, nor do such comments affect the Site score.

This comment results in no change to the HRS score and no change in the decision to place the Site on the NPL.

3.2.2 Expansion of Site

Comment: Arnstein & Lehr argued that the EPA is set to significantly expand the boundaries of the Site without supporting data, and that the EPA has no authority to investigate to obtain any data on other areas potentially affected by the Site. Arnstein & Lehr stated that the EPA had indicated concern in the HRS documentation record at proposal over the potential for lead contamination at "nearby residential sites," reportedly due to historic operations at Sandoval Zinc. Arnstein & Lehr then stated that the HRS documentation record at proposal did not

address the potential lead contamination at adjacent properties, which it noted is the stated concern of both the Illinois EPA and the Illinois Department of Public Health.

Response: The possible future expansion of the site to include other areas where the release from the Sandoval Zinc facility has come to be located is not a factor pertinent to the decision to place the Site on the NPL; that the site qualifies for the NPL has been established. As stated earlier in section 3.2.1, Extent of Site for Listing Purposes, of this support document, the Site qualifies for the NPL based on the source and contamination in the adjacent wetlands. These two areas satisfy the HRS definition of site, as provided in HRS Section 1.1, *Definitions*:

> Area(s) where a hazardous substance has been deposited, stored, disposed, or placed, or has otherwise come to be located. Such areas may include multiple sources and may include the area between sources.

However, expansion of the site boundaries could occur in a subsequent stage of the CERCLA process. In the preamble to the proposed HRS on March 31, 1989 (54 FR 13298), the EPA stated:

> HRS scoring and the subsequent listing of a release merely represent the initial determination that a certain area may need to be addressed under CERCLA. Accordingly, EPA contemplates that the preliminary description of facility boundaries at the time of scoring will need to be refined and improved **as more information is developed** as to where the contamination has come to be located; this refining step generally comes **during the RI/FS stage**. [Emphasis added]

A similar passage is included in the HRS documentation record at proposal on page 1, as a footnote to the site address listed on that page:

> Generally, HRS scoring and the subsequent listing of a release merely represent the initial determination that a certain area may need to be addressed under CERCLA. Accordingly, EPA contemplates that the preliminary description of facility boundaries at the time of scoring will be refined as more information is developed as to where the contamination has come to be located.

And, as stated in the preamble to the proposed rule in which this site was proposed to the NPL (76 FR 13115, March 10, 2011):

> EPA regulations provide that the Remedial Investigation ("RI") "is a process undertaken. . . to determine the nature and extent of the problem presented by the release" as more information is developed on site contamination, and which is generally performed in an interactive fashion with the Feasibility Study ("FS") (40 CFR 300.5). During the RI/FS process, the release may be found to be larger or smaller than was originally thought, as more is learned about the source(s) and the migration of the contamination . . . Moreover, it generally is impossible to discover the full extent of where the contamination "has come to be located" before all necessary studies and remedial work are completed at a site.

The RI/FS generally seeks to provide a better definition of the nature and extent of contamination at a site and to determine what CERCLA-funded remedial actions, if any, may be appropriate. As stated by the D.C. Circuit Court of Appeals, "EPA may alter or expand the boundaries of a NPL site if subsequent study reveals a wider-than-expected scope of contamination." Washington State DOT v. EPA, 917 F.2d 1309, 1310 (D.C. Cir. 1990) (Citing Eagle-Picher Indus. v. EPA, 822 F.2d 132, 144 (D.C. Cir. 1987)).

The basic purpose of the HRS as a screening tool (a "rough list" of prioritized hazardous sites; a "first step in a process, nothing more, nothing less") has been consistently upheld by the D.C. Circuit Court of Appeals (See Honeywell Int'l, Inc. v. EPA, 372 F.3d 441, 443 (D.C. Cir. 2004); Washington State DOT v. EPA, 917 F.2d 1309,

1310 (D.C. Cir. 1990); *Eagle Picher Indus. v. EPA*, 759 F.2d 922, 932 (D.C. Cir. 1985) (Eagle Picher II)). The EPA would like to investigate each possible site completely and thoroughly prior to evaluating a site for proposal for addition to the NPL, but it must reconcile the need for certainty before action with the need for inexpensive, expeditious procedures to identify potentially hazardous sites. The D.C. Circuit Court of Appeals has found the EPA's approach to solving this conundrum to be "reasonable and fully in accord with Congressional intent. "*Eagle Picher Industries, Inc." v. EPA*, (759 F.2d 905 (D.C. Cir. 1985)(Eagle Picher I)).

Until the site investigation process has been completed and a remedial action (if any) selected, EPA can neither estimate the extent of contamination at the Site, nor describe the ultimate dimensions of the Site. Even during a remedial action (e.g., the removal of buried waste) EPA may find that the contamination has spread further than previously estimated, and the site definition may be correspondingly expanded. See Washington State DOT v. EPA, 917 F.2d 1309, 1310 (D.C. Cir. 1990) (citing Eagle-Picher Indus. v. EPA, 822 F.2d 132, 144 (D.C. Cir. 1987)).

The HRS documentation record at proposal identified for the public in multiple locations that the EPA would, in the future, consider other pathways or other areas where the release from the Sandoval Zinc operation came to be located. The first such location was on the review cover sheet of the HRS documentation record at proposal, where the following was stated:

> The soil exposure, ground water and air migration pathways were not scored as part of this Hazard Ranking System (HRS) evaluation. . . . These pathways may be of concern to EPA and may be evaluated during future investigations.

Another location where the public was notified of other possible contamination due to the release from the Sandoval Zinc operation was on pages 30-31 of the HRS documentation record at proposal, which stated:

> Other Possible Sources
> During the preparation of the HRS package, other possible sources of contamination were identified at the Sandoval Zinc Company facility. The other possible sources include:
>
> 1) Contaminated soil - During sampling activities conducted in 1996, one soil sample (X105) was collected from the west bank of the pond east of the Sandoval Zinc property (Ref. 9, p. 12). Sample analysis indicated several contaminants, including cadmium, copper, lead, nickel, and zinc, were above background concentrations and similar in nature to those detected in the contaminated soil on Sandoval Zinc Company property (Ref. 10, pp. 4, 8, 12). The radial nature of property drainage has provided the mechanism by which contaminants have likely migrated from the property boundaries resulting in an additional area of contaminated soil (Ref. 9, p. 16) . . .
>
> 2) Contaminants from operations at the Sandoval Zinc Company facility that have been transported throughout the Village of Sandoval for road and sidewalk base and fill material - Cinders that were unable to be utilized by the plant were placed into large piles on the property and offered to the public and the Village of Sandoval for use in constructing and surfacing roadways, driveways, sidewalks, and parking lots (Ref. 4, p. 1-2, 4) . . .
>
> 3) Stack emissions from the operation of the plant that may have settled in parts of the Village of Sandoval - The windblown ash from the smelter stack settled on the plant property and the surrounding farmland (Ref. 13, p. 1-3). Former employees of the facility have spoken about smoke being emitted from Sandoval Zinc Company facility and subsequent sickness (Ref. 4, p. 1). Typically, ash from secondary zinc smelters using retort furnaces is high in concentrations of heavy metals (Ref. 13, p. 1-3). The volume of ash typically emitted from secondary zinc smelter retort stacks averaged between 50 to 100 tons per year (Ref. 13, p. 1-3).

The discussion of these other possible sources in the HRS documentation record at proposal identifies that the EPA may further investigate these sources during the RI for the site and, if possible, determine whether contamination from these other possible sources poses a sufficient risk to warrant remediation. This is consistent with the NCP as cited in the Federal Register (76 FR 13115, March 10, 2011), excerpted above, and the above-cited D.C. Circuit Court decisions. Section 3.9, Definition of Source/Other Possible Sources, of this support document provides additional information concerning these other possible sources.

Regarding Arnstein & Lehr's comment related to potential lead contamination at nearby residential sites and adjacent properties, the EPA is indeed concerned about the potential for contamination at adjacent and nearby properties due to Sandoval Zinc operations, as explained in the Other Possible Sources section of the HRS documentation record at proposal as discussed above in this response. Please also see section 3.9, Definition of Source/Other Possible Sources, of this support document for further discussion on this topic.

This comment results in no change to the HRS score and no change in the decision to place the Site on the NPL.

3.3 Purpose of Listing

Comment: Arnstein & Lehr alleged that, since the Sandoval Zinc Co. had been referred to the EPA, the EPA had "not developed much relevant information at all." It also commented that the EPA's purpose in listing the site was to attempt to qualify the Site for federal funding and oversight for a remedial investigation (RI) (or to convince potentially responsible parties [PRPs] to conduct RI on their own), claiming that "[t]he Agency's actions are premature and not authorized by statute."

Response: The EPA's actions to evaluate the Sandoval Zinc site using the HRS and list the Site are consistent with the requirements of CERCLA and SARA, and the statutory purpose of the NPL, which is to inform the public of possible threats and identify those sites which appear to warrant further investigation and/or remediation. It is not premature to place this site on the NPL because the information necessary to perform the HRS evaluation, which was established when the present (1990) HRS was promulgated, is available as shown in the HRS documentation record at proposal, along with the references provided as listed on pages 16-20 of the HRS documentation record at proposal.

Regarding the commenter's claim that the EPA's purpose was to qualify the Site for federal funding and oversight for RI or to convince the PRPs to conduct RI, the commenter is in error. The primary purpose of the NPL is stated in the legislative history of CERCLA (Report of the Committee on Environment and Public Works, Senate Report No. 96-848, 96th Cong., 2d Sess. 60 [1980]), as follows (in relevant part):

> The priority list serves primarily informational purposes, identifying for the States and the public those facilities and sites or other releases which appear to warrant remedial actions.

The EPA has clearly, via this listing, identified for the States and the public both the source and release (the waste pile and the contaminated wetland) that are currently scored using the HRS, and other possible sources, pathways and releases that the EPA may consider in the future.

The identification of the source and release that are scored is discussed in further detail in section 3.1, Definition of Site, of this support document. The identification of other possible sources, pathways and related releases is discussed in section 3.2.2, Expansion of Site, of this support document.

Concerning Arnstein & Lehr's comment that the Agency's actions are not authorized by statute, CERCLA Section 105(a)(8)(A) requires the EPA to establish:

> Criteria for determining priorities among release or threatened releases [of hazardous substances] throughout the United States for the purpose of taking remedial action and, to the extent practicable taking into account the potential urgency of such action, for the purpose of taking removal action. Criteria and priorities . . . shall be based upon the relative risk or danger to public health or welfare or the environment . . . taking into account to the extent possible the population at risk, the hazard potential of the hazardous substances at such facilities, the potential for contamination of drinking water supplies, the potential for direct human contact, [and] the potential for destruction of sensitive ecosystems . . .

To meet this requirement and help set priorities, the EPA adopted the current HRS as Appendix A to the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (55 FR 51587, December 14, 1990). The HRS is the primary way of determining whether a site is to be included on the NPL, and is a crucial part of the Agency's program to address the identification of actual and potential releases. In 1986, Congress enacted the Superfund Amendments and Reauthorization Act of 1986 (SARA) (Pub. L. 99-499), requiring the EPA to amend the original (1982) HRS.

As such, the EPA's actions to evaluate the Site using the HRS and list the Site are consistent with the requirements of CERCLA and SARA.

Regarding Arnstein & Lehr's allegation that the EPA had not developed relevant information since the Site's referral, and that the scoring and listing were premature, there was no need to develop new information given the extent of data and information already available, nor did Arnstein & Lehr identify any specific gaps in the information used for scoring.

Congress, in its Conference Report on SARA, stated the substantive standard against which HRS revision could be assessed:

> This standard is to be applied within the context of the purpose for the National Priorities List; i.e., identifying for the States and the public those facilities and sites which appear to warrant remedial actions. The standard requires the Hazard Ranking System to rank sites as accurately as the Agency believes is feasible using information from preliminary assessments and site inspections . . . Meeting this standard does not require long-term monitoring or an accurate determination of the full nature and extent of contamination at sites or the projected levels of exposure such as might be done during remedial investigations and feasibility studies. This provision is intended to ensure that the Hazard Ranking System performs with a degree of accuracy appropriate to its role in expeditiously identifying candidates for response actions. [H.R. Rep. No. 962, 99th Cong., 2nd Sess. at 199-200 [1986]]

The HRS itself specifies the information that is required to complete an HRS evaluation, i.e., for most factors within each pathway, the HRS provides specific definitions or instructions for required data. For example, when scoring wetlands with actual contamination documented by surface water samples, HRS Section 4.1.4.3.1 states to compare the contaminant levels in the surface water samples to the ecological-based benchmarks provided in Table 4-22 of the HRS (e.g., Ambient Water Quality Criteria). To determine if the wetlands under consideration qualify for HRS scoring, HRS Table 4-24 specifies "Wetlands as defined in 40 CFR Section 230.3."

For the purpose of responding to discovery of a release of hazardous substances, the NCP (40 CFR Section 300.420) authorizes the EPA or other lead agency to complete a preliminary assessment (PA) and, if warranted, a site inspection (SI). As discussed in Reference 9 of the HRS documentation record at proposal, the EPA (via cooperative agreement with the State of Illinois) conducted a PA in 1986 and a screening SI in 1988. As shown above in Congress' Conference Report, Congress intended the HRS could be implemented using information from PAs and SIs. The primary investigations supporting the Site score were a 2009 ESI conducted by the State of

Illinois (Reference 24), and a 1996 ESI (Reference 9) also conducted by the State of Illinois. (See the HRS documentation record at proposal, Section 2.2, Source Characterization, and Section 4.1.4.1, Environmental Threat Likelihood of Release.) Both ESIs were supported by information gathered during the State's PA and screening SI, and both were conducted under cooperative agreement with the EPA. Additional supporting information for the HRS scoring was provided by a 1993 Feasibility Study conducted by Ebasco, and a soil and ground water study conducted in 1982 by the Illinois State Water Survey and the Illinois State Geological Survey, along with the remaining references that are specifically cited throughout the HRS documentation record at proposal, and that are listed on pages 16-20 of the HRS documentation record at proposal.

On this basis, the EPA's action to list the Site is not premature, because sufficient information exists with which to conduct the HRS evaluation. As can be seen from the excerpt above, it was also Congress' intent that the NPL identify for the States and the public those facilities and sites that appear to warrant remedial actions, expeditiously and without long-term monitoring or determination of the full nature and extent of contamination. Determination of the exact nature and extent of contamination necessary to identify the need for remediation is conducted in a separate stage in the CERCLA process during the remedial investigation (RI). Based on the above discussion as supported in the citations above, the listing is not premature but timely, and is clearly authorized by statute.

This comment results in no change to the HRS score and no change in the decision to place the Site on the NPL.

3.4 Due Process and Future Studies

Comment: Arnstein & Lehr made a number of comments objecting to an investigation in the Village of Sandoval that it considers the EPA is proposing to conduct, referring to a series of maps "identifying Arsenic, Lead and Zinc deposits throughout the Village of Sandoval," that it attached to its comments as Exhibit D[1]. Arnstein & Lehr stated that, while the HRS documentation record at proposal "analyzes only surface water," the EPA has proposed to perform a soil investigation throughout the Village of Sandoval to identify the "limits of the actual site;" Arnstein & Lehr objected to this investigation, stating that the investigation is well outside of the proposed site and well outside the area for which the EPA has data, concluding that the investigation would not be sufficient to determine feasible remedial alternatives. Arnstein & Lehr also stated that the EPA has no statutory authority to require the investigation, and it is unlawful to mandate this action which is potentially thousands of feet outside the property boundaries of Sandoval Zinc. Arnstein & Lehr also speculated that major portions of the area intended for investigation may not warrant listing or be contaminated.

Response: The design for further investigation of a site is not a factor considered in determining whether or not to place a site on the NPL. Future investigations may be carried out subsequent to NPL listing consistent with the CERCLA process.

Regarding the "proposed investigation," it appears that the title of the first map in Exhibit D, "Proposed Sample Design, Village of Sandoval," may have conveyed an incorrect impression. The title of this map is misleading in that the sample design depicted on the map has already been implemented (and is therefore not "proposed); the map is simply a relic of the planning stages of the investigation that was conducted in August 2010. The remaining maps in Exhibit D of the comments depict the results of that sampling investigation.

Furthermore, possible future investigations may appropriately be carried out subsequent to NPL listing as a separate phase of the CERCLA process. Consistent with CERCLA, the Agency has in place an orderly procedure for identifying sites where releases of substances addressed under CERCLA have occurred or may occur, placing

[1] EPA also mentioned further investigation in a General Notice of Potential Liability sent in August 2010, prior to the Site's proposal to the NPL on March 10, 2011, to a number of parties, including those on whose behalf Arnstein & Lehr have commented.

such sites on the NPL, evaluating the nature and extent of the threats at such sites, responding to those threats, and deleting sites from the NPL. The purpose of the initial two steps is to develop the NPL, which identifies for the States and the public those sites that appear to warrant remedial action (56 FR 35842, July 29, 1991). The evaluation or RI/FS phase involves onsite testing to assess the nature and extent of the public health and environmental risks associated with the site and to determine what CERCLA-funded remedial actions, if any, may be appropriate. After a period of public comment, the Agency responds to those threats by issuing a Record of Decision (ROD), which selects the most appropriate alternative. The selected remedy is implemented during the remedial design/remedial action phase. Finally, the site may be deleted from the NPL when the Agency determines that no further response is appropriate.

This process encourages and relies on the participation of the public, including potentially responsible parties. In addition to commenting during the comment period (typically 60 days) after a site is proposed for listing, the public can comment during the time the Agency is evaluating and selecting a remedy (the Agency may also hold a public hearing during the latter decision-making period). If private parties conduct remedial action under a Consent Decree between the EPA and the parties, the decree is also subject to public comment. The Agency considers that the above process offers the public sufficient opportunity to present facts and opinions germane to its decision-making.

Thus, the HRS documentation record at proposal does inform the public that site-related contaminants in other pathways may warrant further investigation and, consistent with CERCLA, those possible future investigations may appropriately be performed following NPL listing.

This comment results in no change to the HRS score and no change in the decision to place the Site on the NPL.

3.5 HRS and Risk Assessment

Comment: Arnstein & Lehr commented that the EPA indicated in the HRS documentation record at proposal that the "Sandoval Zinc Company property is qualified for addition to the NPL due to certain identified hazards."

Response: To the extent that Arnstein & Lehr is implying that the HRS evaluates a site based on actual discretely identified risk, the Sandoval Zinc site qualifies for placement on the NPL based on relative risk, among other factors, as opposed to "certain identified hazards" or actual risk. The HRS is a numerically based screening tool that the Agency uses to assess the relative degree of risk to human health and the environment posed by a site compared to other sites subject to review. The HRS score is used to determine whether a site is eligible for placement on the NPL. The NPL is intended primarily to guide the EPA in determining which sites warrant further investigation to assess the nature and extent of public health and environmental risks associated with a release of hazardous substances, pollutants or contaminants. See 76 FR 13113 (Proposed Rule, Sandoval Zinc Co., March 10, 2011); see also 55 FR 51532 (Final Rule, Hazard Ranking System, December 14, 1990). CERCLA § 105(a)(8)(A) requires the EPA to determine NPL priorities based on the "relative risk or danger to public health or welfare, or the environment." The criteria the EPA applies to determine this relative risk or danger is codified in the HRS, and is the Agency's primary tool for deriving a site score based on the factors identified in CERCLA. In this case, the HRS evaluation and score above 28.50 represents the EPA's determination that the site may pose a relative risk or danger to human health and the environment, and warrants further investigation under CERCLA.

In the preamble to the HRS, the EPA stated:

> The Agency stresses that the limited data generated at the SI stage are designed to support site screening, and are not intended to provide support for a quantitative risk assessment (55 FR 51541, December 14, 1990).

The EPA performs a comprehensive risk assessment for the site as part of further investigations that typically follow listing. The results of risk assessment activities will be considered during the evaluation of the need for remedial actions at the site.

Further, Arnstein & Lehr refers to the "Sandoval Zinc Company property" qualifying for NPL listing; in fact, the site that is being listed is not defined by the property boundaries. Definition of this site is addressed in section 3.1, Definition of Site, of this support document.

This comment results in no change to the HRS score and no change in the decision to place the Site on the NPL.

3.6 Adequacy of Site Characterization

Comment: Arnstein & Lehr stated that the EPA has information relating to only one source, the slag/cinder pile, and migration from it, later stating that the EPA has only limited data (surface water) to list the Site, reporting a score sufficient to list based on only that information. Arnstein & Lehr argued that the EPA needs to undertake further investigation to obtain information with which to supplement the HRS documentation record at proposal and support an expanded site determination.

Response: The HRS documentation record at proposal contained sufficient information to establish an HRS score for the Site, and the commenter has not shown that shown that any of this information was in error.

Section 2.2, Source Characterization, of the HRS documentation record at proposal provided information, including soil/source sample analytical results, confirming the presence of hazardous substances in Source 1 (the cinder/slag pile). Section 4.1.4.1, Environmental Threat – Likelihood of Release, of the HRS documentation record at proposal contained sediment evidence of observed releases of hazardous substances to surface water. In addition, data and information were provided by each of the references specifically cited throughout the HRS documentation record at proposal and listed on pages 16-20 of the HRS documentation record at proposal. These data were applied in accordance with HRS criteria and established an HRS Site score greater than 28.50, which qualifies the Site for NPL listing. (See also section 3.3, Purpose of Listing, of this support document regarding the level of information required to score a site using the HRS). Arnstein & Lehr have not shown any specific alternatives to the scoring contained in the HRS documentation record at proposal or errors in the data used to score the source or site. As discussed in section 3.4, Due Process, of this support document, further, more extensive site characterization may take place in the evaluation or RI/FS phase following NPL listing; the RI/FS involves onsite testing to assess the nature and extent of the public health and environmental risks associated with a site and to determine what CERCLA-funded remedial actions, if any, may be appropriate.

This comment results in no change to the HRS score and no change in the decision to place the Site on the NPL.

3.7 HRS-Eligible Targets

Comment: Arnstein & Lehr stated that, via the HRS, the EPA is required to evaluate contamination "in four recognized human pathways: groundwater, surface water, soil and air."

Response: The Site was scored based on the environmental threat component of the surface water migration pathway, in accordance with the provisions of the HRS. Regarding Arnstein & Lehr's reference to four "**human** pathways" [emphasis added], the surface water migration, soil exposure, and air migration pathways incorporate evaluations that are not based solely on risk to humans. All three of these pathways include provisions for evaluating sensitive environments (for surface water, see HRS Section 4.1.4.3; for soil exposure, see HRS Section 5.1.3.5; for air, see HRS Section 6.3.4). In addition, the surface water pathway includes a provision for evaluating human food chain organisms (see HRS Section 4.1.3.3).

If the commenter is suggesting that the EPA should evaluate the ground water migration, air migration, and soil exposure pathways in addition to the surface water pathway, then in response, the HRS does not require scoring all four pathways if scoring those pathways does not change the listing decision. For some sites, data for scoring a pathway are unavailable and obtaining these data would be time-consuming or costly. In other cases, data for scoring some pathways ma be available, but would only have minimal effect on the site score. In still other cases, data on other pathways could substantially add to a site score but would not affect the listing decision. The HRS is a screening tool that uses limited resources to determine whether a site should be placed on the NPL for possible Superfund response. A subsequent stage of the Superfund process, the RI, characterizes conditions and hazards at the site more comprehensively.

To the extent practicable, the EPA attempts to score all pathways that pose significant threats. If the contribution of a pathway is minimal to the overall score, in general, that pathway will not be scored. In these cases, the HRS documentation record may include a brief qualitative discussion to present a more complete picture of the conditions and hazards at the site. As a matter of policy, the EPA does not delay listing a site to incorporate new data or score new pathways if the listing decision would not be affected by such action.

The EPA must balance the need to fully characterize a site with the limited resources available to collect and analyze site data. For this reason, the EPA generally will not score additional pathways upon receiving new data as long as the site still meets the HRS cutoff score. However, any additional data characterizing site conditions could provide useful information during the RI.

The HRS is intended to be a "rough list" of prioritized hazardous sites; a "first step in a process--nothing more, nothing less" Eagle Picher Indus. v. EPA, 759 F.2d 922, 932 (D.C. Cir. 1985) (Eagle Picher II). The EPA would like to investigate each possible site completely and thoroughly prior to evaluating the site for proposal to the NPL, but must reconcile the need for certainty before action with the need for inexpensive, expeditious procedures to identify potentially hazardous sites. The D.C. Circuit Court of Appeals has found the EPA's approach to solving this conundrum to be "reasonable and fully in accord with Congressional intent." Eagle Picher Industries, Inc. v. EPA, (759 F.2d 905 (D.C. Cir. 1985) (Eagle Picher I)).

This comment results in no change to the HRS score and no change in the decision to place the Site on the NPL.

3.8 Liability/Negotiations

Comment: Arnstein & Lehr made a number of comments regarding or related to liability and settlement, noting that the Agency has so far resisted settlement negotiations and is attempting to persuade recipients of general liability letters to participate in remedial investigation. Arnstein & Lehr further noted that the EPA does not have sufficient information to allocate liability or pursue settlement. Arnstein & Lehr alleged that without "further and proper investigation" the EPA cannot fully define the facility or determine and assign liability, and that to demand PRPs participate in an administrative process that may not even include their liability is unlawful, arbitrary, and capricious. Arnstein & Lehr also commented that the EPA has identified PRPs and delivered general notices of liability, asking for voluntary participation, having yet to define the site, identify remedial alternatives or costs, or determine actual liability.

Response: Neither liability nor possible settlement negotiations were considered in the decision to list the Site on the NPL. Inasmuch as these comments concern liability for contamination at this site, whether any party may be liable for response costs is not considered when evaluating a site under the HRS; liability for cleanup is not established at the time of NPL listing and does not impact the listing decision.

The NPL serves primarily as an informational and management tool. The identification of a site for the NPL is intended primarily to guide the EPA in determining which sites warrant further investigation to assess the nature and extent of the human health and environmental risks associated with the site and to determine what CERCLA-

financed remedial action(s), if any, may be appropriate. Identification of a site for the NPL does not reflect a judgment on the activities of the owner(s), operator(s), or generator(s) associated with a site. It does not require those persons to undertake any action, nor does it assign any liability to any person. Subsequent government actions will be necessary in order to do so, and these actions will be attended by all appropriate procedural safeguards. This position, stated in the legislative history of CERCLA, has been explained in the Federal Register (48 FR 40759, September 8, 1983 and 53 FR 23988, June 24, 1988).

Settlement negotiations or agreements, either attendant upon or separate from liability determinations, are likewise not considered when evaluating a site under the HRS, and are not conducted as part of NPL listing. Placing a site on the NPL is not delayed to allow negotiations regarding response actions to be completed. Proceeding with the listing process need not inhibit efforts to determine response actions. If any PRP wishes to expedite cleanup efforts, it may continue negotiations with the EPA and undertake removal actions under the EPA's supervision and pursuant to appropriate agreements with governmental authorities (under enforcement authorities of CERCLA or those of other statutes). Placing a site on the NPL does not encumber or preclude PRPs from entering into these agreements. The EPA has entered into many such agreements before and after a site's promulgation to the NPL, and such an alternative is available to others.[2]

As to whether the EPA has yet to adequately define the site, the site has been adequately defined for purposes of its placement on the NPL, as described in section 3.2, Extent of Site, of this support document. Concerning whether the EPA needs to conduct further investigation to define the Site, the investigations are sufficient to document the site qualifies for placement on the NPL, as described in section 3.6, Adequacy of Site Characterization, of this support document.

This comment results in no change to the HRS score and no change in the decision to place the Site on the NPL.

3.9 Definition of Source/Other Possible Sources

Comment: Arnstein & Lehr noted that the EPA identified "other possible sources" of contamination, which Arnstein & Lehr stated will likely require further investigation to quantify the potential lead risk in and about the Village of Sandoval. These other possible sources, as described by Arnstein & Lehr, included the following:

- Contaminated Soil: as documented by samples "collected from soil located on the site and from the west bank from the pond east of the Sandoval Zinc Company property site," containing metals likely due to migration from Sandoval Zinc. Arnstein & Lehr alleged that none of the data related to the described samples is present in the "HRS Record."
- Offsite Contaminants: contaminants removed from the Sandoval Zinc Co. property and used as fill material and as road and sidewalk base at various locations located in and about the Village of Sandoval. Arnstein & Lehr paraphrased the EPA's description of soil samples collected from residential areas within the Village, which contained levels of metals exceeding three times the background levels, and stated that "[n]one of the data from those samples is in the HRS Record under review."
- Stack Emissions from Historic Operations: Arnstein & Lehr also stated that the EPA indicated "from anecdotal sources," that the operations at the Sandoval Zinc Co. may have included air emissions that released ash that settled on plant property and in the surrounding area; it additionally discussed the EPA's documentation of typical zinc smelters and their usual range of emissions. Arnstein & Lehr then noted that the Agency reported on the fact that Sandoval Zinc installed a stack scrubber in 1970, and alleged that the Agency indicated that the Sandoval Zinc Co. was "a major emitter of contaminants of concern."

[2] The EPA Region 5 and the States within the Region have previously participated in settlement negotiations with PRPs during and after NPL listing. Recent examples in the Region include Asarco, Taylor Springs, Illinois; Eagle Zinc, Hillsboro, Illinois; Lake Calumet Cluster, Chicago, Illinois; and Behr Dayton Thermal System VOC Plume, Dayton, Ohio.

Arnstein & Lehr then alleged that the EPA, in fact, "concedes" that the other possible sources "have yet to be sufficiently investigated or the risks evaluated." Then, in a series of statements, Arnstein & Lehr indicated its belief that he EPA is including these offsite areas as sources, and objected to:

- including this "expanded site" on the NPL,
- the lack of data from the three other sources,
- the offsite locations' lack of connection to Sandoval Zinc.

Response: The other possible sources identified in the HRS documentation record at proposal met the HRS definition of a source and, therefore, were properly included in the HRS documentation record at proposal.

HRS Section 1.1, *Definitions*, defines source, in part, as "[a]ny area where a hazardous substance has been deposited, stored, disposed, or placed, plus those soils that have become contaminated from migration of a hazardous substance."

HRS Section 2.2.1, *Identify sources*, states, "[f]or the three migration pathways, identify the sources at the site that contain hazardous substances. Identify the migration pathway(s) to which each source applies."

HRS Section 2.2.2, *Identify hazardous substances associated with a source*, states in part:

> For each of the three migration pathways, consider those hazardous substances documented in a source (for example, by sampling, labels, manifests, oral or written statements) to be associated with that source when evaluating each pathway.

Pages 30-31 of the HRS documentation record at proposal present three other possible sources. The discussion of these other possible sources in the HRS documentation record at proposal identifies that the EPA may further investigate these sources during the RI for the site and, if possible, determine whether releases from these other possible sources pose a sufficient risk and warrant remediation.

Regarding data related to the contaminated soil, the HRS documentation record at proposal, page 30 stated in part that:

> During sampling activities conducted in 1996, one soil sample (X105) was collected from the west bank of the pond east of the Sandoval Zinc property (Ref. 9, p. 12). Sample analysis indicated several contaminants, including cadmium, copper, lead, nickel, and zinc, were above background concentrations and similar in nature to those detected in the contaminated soil on Sandoval Zinc Company property (Ref. 10, pp. 4, 8, 12).

Reference 9 (the 1997 Illinois EPA ESI report), on page 12, mentions that a sample X104 was designated as the background soil sample and that several analytes in sample X105 were detected at levels greater than those detected in the background sample. Reference 10 (appendices to that report), on pages 4, 8, and 12, provides the analytical results and location for sample X105 (and the background sample X104). This information definitively associates the presence of hazardous substances with this other possible source area.

Regarding data related to the offsite contaminants in the Village of Sandoval, the HRS documentation record, pages 30-31, stated in part:

> Twenty-seven soil samples were collected from residential areas inside the municipal boundaries of Sandoval. These samples were collected to determine the impact of inorganic contaminants in the area. All samples were collected within 0 - 6 inches from the surface of the soil (Ref. 24, p. 15-16). Upon comparison to background concentrations, antimony, arsenic, barium, beryllium,

cadmium, chromium, cobalt, copper, lead, manganese, mercury, nickel, selenium, silver, and zinc exceeded three times the background levels for soil samples (Ref. 24, Table 2).

Reference 24 (the 2010 Illinois EPA expanded site investigation report), on pages 15-16, confirms the sample depths and mentions that samples X119 and X126 were designated as background soil samples. Table 2 of Reference 24 lists the analytical results for the relevant soil samples. Therefore, hazardous substances are conclusively associated with this other possible source area.

Thus, the data supporting these other possible sources is present in the references, which are specifically cited in the relevant descriptive passages in the HRS documentation record at proposal. These references are part of the official HRS package docket at proposal.

Regarding the stack emissions, the HRS documentation record at proposal on page 31 discussed that former operations stack emissions settled on the site and surrounding farmland, tonnage estimates of emissions and typical content of ash based on similar plants, and the fact that a scrubber was installed on the stack in 1970 in compliance with air pollution control regulations. This information serves to associate hazardous substances with the stack emissions as an "other possible source." The HRS documentation record did not conclude that the facility was a "major" emitter.

The HRS documentation record at proposal stated that "due to lack of sufficient documentation, these other possible sources were not evaluated in this HRS documentation record." However, these other possible sources are not scored as sources in the HRS documentation record at proposal and have no effect on the HRS site score. Additionally, as discussed in section 3.4, Due Process, of this support document, site-related contaminants in pathways other than those scored in the HRS documentation record may warrant further investigation, and those possible future investigations may appropriately be carried out subsequent to NPL listing as a separate phase of the CERCLA process. And, as explained in section 3.2, Extent of Site, of this support document, the EPA may alter or expand the boundaries of a NPL site if subsequent study reveals a wider-than-expected scope of contamination.

This comment results in no change to the HRS score and no change in the decision to place the Site on the NPL.

4. Conclusion

The original HRS score for this site was 30.00. Based on the above responses to public comments, the score remains unchanged. The final scores for the Sandoval Zinc Co. site are:

Ground Water:	Not scored (NS)
Surface Water:	60.00
Soil Exposure:	NS
Air Pathway:	NS
HRS Score:	30.00